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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,916	10/28/2003	Sang Ho Lee	SI-0044	3953

34610 7590 10/31/2007  
KED & ASSOCIATES, LLP  
P.O. Box 221200  
Chantilly, VA 20153-1200

EXAMINER
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AHMED, SALMAN

ART UNIT	PAPER NUMBER
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2619

MAIL DATE	DELIVERY MODE
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10/31/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

5

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/693,916	LEE, SANG HO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Salman Ahmed	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/2/2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 14, 15 and 26-31 is/are rejected.
- 7) ☒ Claim(s) 4-13 and 16-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/28/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

Claims 1-31 are pending.

Claims 1-3, 14, 15 and 26-31 are rejected.

Claims 4-13 and 16-25 are objected to.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 27 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 states, the data RLP module is configured to perform at least one of fragmentation of a packet data frame in an upper layer and assembly of a packet data frame in the upper layer into the RLP frame. It is unclear as to data RLP module is performing the fragmentation and assembly or upper layer is performing the fragmentation and assembly into RLP frame. As such, claim 27 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 states, the voice RLP module is configured to perform at least one of fragmentation of a voice frame in an upper layer and assembly of the voice frame in the upper layer into the RLP frame. It is unclear as to voice RLP module is performing the fragmentation and assembly or upper layer is performing the fragmentation and

assembly into RLP frame. As such, claim 28 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seo (US PAT 6452911) in view of Harris (US PAT PUB 2003/0021255).

In regards to claim 1, Seo teaches a method for providing simultaneous voice and data (SVD) service in a mobile communication system, comprising: performing SVD call processing that supports SVD service between mobile terminals and base stations by using a SVD service option; and providing SVD service by at least one of transmitting and receiving voice and packet data after service negotiation using the SVD service option is completed (column 3 lines 40-59, to request for a simultaneous transfer of voice and data, a user inputs from a mobile station 100 a call number of the destination and presses a "send" key. Upon pressing the "send" key, the mobile station 100 transmits the origination message to the base station 200 through an access channel. The Base Station 200 receives the transmitted message and after examining the message, informs the CCP of the BSC 300 that a message has been generated and the origination of the call. The TCE4 of the base station 200 also transmits a signal

"ACK" through a paging channel to the mobile station 100 acknowledging the receipt of the message. Before connecting and transmitting the call, the CCP of the BSC 300 verifies the states of its own system and the MSC 400. If the BSC 300 and MSC 400 are not in overload states, the CCP connects the call by allocating a frame offset and the vocoder resources, according to the service option of the call origination. The service option may include sending voice frames, data frames, or both voice and data frames).

Seo does not explicitly teach using a radio link protocol (RLP) frame for voice and data.

Harris in the same field of endeavor teaches using a radio link protocol (RLP) frame for voice and data (Figure 1 and section 0013, between mobile 10 and base station 11, a speaker air link 104 provides for the data transmission from the mobile 10 to the base station 11. Base station 11 is coupled to mobile 12 via the listener's over the air link 116. The speaker at mobile 10 is coupled to vocoder 101 which transmits the voice to RLP input buffer 102. Buffer 102 feeds the RLP transmitter 103 which transmits the data over the speaker air link 104 to base station 11. The speaker may be a conventional voice speaker or may include a constant bit rate audio or video source).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Seo's system/method by incorporating the steps of using a radio link protocol (RLP) frame for voice and data as suggested by Harris. The motivation is that (as suggested by Harris, sections 0001-0002) for providing efficient and reliable data services and more particularly for providing data, voice and dispatch

services over code division multiple access 2000 (CDMA 2000) system requires that the voice bearer traffic be transmitted through radio link protocol (RLP).

In regards to claim 14, Seo teaches a method for providing simultaneous voice and data (SVD) service in a mobile communication system, comprising: performing SVD call processing that supports SVD service through SVD request signaling message exchange, when SVD service is requested after packet data call setup between a mobile terminal and a base station is completed; and providing SVD service by at least one of transmitting and receiving voice and packet data after service negotiation is completed through the SVD request signaling message exchange (column 3 lines 40-59, to request for a simultaneous transfer of voice and data, a user inputs from a mobile station 100 a call number of the destination and presses a "send" key. Upon pressing the "send" key, the mobile station 100 transmits the origination message to the base station 200 through an access channel. The Base Station 200 receives the transmitted message and after examining the message, informs the CCP of the BSC 300 that a message has been generated and the origination of the call. The TCE4 of the base station 200 also transmits a signal "ACK" through a paging channel to the mobile station 100 acknowledging the receipt of the message. Before connecting and transmitting the call, the CCP of the BSC 300 verifies the states of its own system and the MSC 400. If the BSC 300 and MSC 400 are not in overload states, the CCP connects the call by allocating a frame offset and the vocoder resources, according to the service option of the call origination. The service option may include sending voice frames, data frames, or both voice and data frames).

Seo does not explicitly teach using a radio link protocol (RLP) frame for voice and data.

Harris in the same field of endeavor teaches using a radio link protocol (RLP) frame for voice and data (Figure 1 and section 0013, between mobile 10 and base station 11, a speaker air link 104 provides for the data transmission from the mobile 10 to the base station 11. Base station 11 is coupled to mobile 12 via the listener's over the air link 116. The speaker at mobile 10 is coupled to vocoder 101 which transmits the voice to RLP input buffer 102. Buffer 102 feeds the RLP transmitter 103 which transmits the data over the speaker air link 104 to base station 11. The speaker may be a conventional voice speaker or may include a constant bit rate audio or video source).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Seo's system/method by incorporating the steps of using a radio link protocol (RLP) frame for voice and data as suggested by Harris. The motivation is that (as suggested by Harris, sections 0001-0002) for providing efficient and reliable data services and more particularly for providing data, voice and dispatch services over code division multiple access 2000 (CDMA 2000) system requires that the voice bearer traffic be transmitted through radio link protocol (RLP).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seo and Harris as applied to claim 1 above and further in view of Park et al. (US PAT PUB 2002/0036993, hereinafter Park).

In regards to claim 2, Seo and Harris teach using RLP for communication.

Seo and Harris do not explicitly teach designating and using a service reference ID for a new SVD service option, which is different from a pre-designated voice service option or packet data service option.

Park in the same field of endeavor teaches designating and using a service reference ID for a new SVD service option, which is different from a pre-designated voice service option or packet data service option (Section 0035, The Length Indicator field 630 and the Length field 650 are added to the SR\_ID field 610 and the Reserved field 620, which are contained in the conventional header).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Seo and Harris' system/method by incorporating the steps of using designating and using a service reference ID for a new SVD service option, which is different from a pre-designated voice service option or packet data service option as suggested by Park. The motivation is that (as suggested by Park, section 0009) in a conventional radio transmitting/receiving system employing the frame structure of FIG. 3, when even a part of header portions 310 and 320 is damaged, it is impossible for a recipient to know the exact length of the DATA field, and consequently, RLP decoding is not possible; thus implementing new structure makes the network reliable.

6. Claims 26-28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gage in view of Wei et al. (US PAT PUB 2005/0163161, hereinafter Wei).

In regards to claim 26, Gage teaches a mobile communication apparatus



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(System in Figure 2) having a service interface comprising: a voice radio link protocol (RLP) module (Figure 2, a voice RLP 15); and a data RLP module (Figure 2, a packet data RLP 16), wherein the apparatus is configured to transmit and/or receive voice and packet data together by using RLP frames (column 7 lines 23-24 and 30-31, all voice information sent on connection 12 is delivered using RLPs 15 and 25. All information transmitted over the RAN connection 13 is delivered to MS connection 23 using the data RLPs 16 and 26).

Gage teaches in Figure 1 showing Link Protocol being in OSI model Layer-2 but does not explicitly teach RLP in MAC sub-layer.

Wei in the same field of endeavor teaches the MAC sublayer comprises a Radio Link Protocol (RLP) 232 (Figure 2 and section 0036).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sage's system/method by incorporating the steps of RLP being in MAC sub-layer as suggested by Wei. The motivation is that, (as suggested by Wei, section 0036) the structure of the MAC sublayer and the entities that comprise the MAC sublayer are described in detail in document TIA/EIA/IS-2000.3-C, entitled "Medium Access Control (MAC) Standard for cdma2000 Spread Spectrum Systems," Release C; thus it is advantageous to adapt to known standards for implementation of MAC/RLP based communication for following reason: Companies actively involved in adhering to standards more frequently reap short- and long-term cost-savings and competitive benefits than those that do not. Standardization can lead to lower transaction costs in the economy as a whole, as well as to savings for individual

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businesses. Standards have a positive effect on the buying power of companies. Standards can help businesses avoid dependence on a single supplier because the availability of standards opens up the market. The result is a broader choice for businesses and increased competition among suppliers. Companies also have increased confidence in the quality and reliability of suppliers who use standards. In addition, standards are used by businesses to exert market pressure on companies further down the value chain, i.e., their clients. Thus, businesses can use standards to broaden their potential markets.

In regards to claims 27, Gage teaches the data RLP module is configured to perform at least one of fragmentation of a packet data frame in an upper layer and assembly of a packet data frame in the upper layer into the RLP frame (column 7 lines 8-22, a voice connection 12, 22 is created in a similar way through the voice RLPs 15, 25, and a packet data connection 13, 23 is created through the packet data RLPs 16, 26. c. Once the connections have been established, when information is to be sent from the RAN 101 to the MS 102, a higher-level entity (not shown) determines the type of information (ToI) to be sent (signaling, voice, or packet data), and enqueues the information to be transmitted over the appropriate connection 11, 12 or 13, respectively).

In regards to claims 28, Gage teaches the voice RLP module is configured to perform at least one of fragmentation of a voice frame in an upper layer and assembly of the voice frame in the upper layer into the RLP frame (column 7 lines 8-22, a voice connection 12, 22 is created in a similar way through the voice RLPs 15, 25, and a

packet data connection 13, 23 is created through the packet data RLPs 16, 26. c. Once the connections have been established, when information is to be sent from the RAN 101 to the MS 102, a higher-level entity (not shown) determines the type of information (Tol) to be sent (signaling, voice, or packet data), and enqueues the information to be transmitted over the appropriate connection 11, 12 or 13, respectively).

In regards to claims 30 and 31, Gage teaches the apparatus being at least one of a mobile terminal and a base station and being a mobile communication system (FIG. 2 illustrates a radio link protocol architecture illustrating a sample current network, showing a radio access network (RAN) 101 and a mobile station (MS) 102).

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gage and Wei as applied to claim 26 above and further in view of Harris.

In regards to claim 29, Gage and Wei teach transmitting voice frames via RLP as described in the rejections of claim 26 above.

Gage and Wei do not explicitly teach RLP flames are classified into full rate half rate, quarter rate and eighth rate.

Harris in the same field of endeavor teaches RLP flames are classified into full rate half rate, quarter rate and eighth rate (sections 0002, 0004 and 0032).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gage and Wei's system/method by incorporating the steps of RLP flames being classified into full rate half rate, quarter rate and eighth rate as suggested by Harris. The motivation is that, (as suggested by Harris, section 0004)

the frame rate is designated generally the lowest rate frame which is large enough to carry the payload; thus making efficient use of the available bandwidth.

8. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seo and Harris as applied to claims 1 and 14 above and further in view of Gage and Wei.

In regards to claims 3 and 15 Seo and Harris teach RLP based communication as described in the rejections of claims 1 and 14 above.

Seo and Harris do not explicitly teach implementing a voice RLP module, which assembles voice frames into RLP frames such that voice and packet data can be transmitted by means of RLP.

Gage in the same field of endeavor teaches a voice radio link protocol (RLP) module (Figure 2, a voice RLP 15); and a data RLP module (Figure 2, a packet data RLP 16), wherein the apparatus is configured to transmit and/or receive voice and packet data together by using RLP frames (column 7 lines 23-24 and 30-31, all voice information sent on connection 12 is delivered using RLPs 15 and 25. All information transmitted over the RAN connection 13 is delivered to MS connection 23 using the data RLPs 16 and 26).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Seo, Harris and Sage's system/method by incorporating the steps of a voice RLP module, which assembles voice frames into RLP frames such that voice and packet data can be transmitted by means of RLP as suggested by Gage.

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The motivation is that (as suggested by Gage, column 6 lines 51-60) for efficient transmission, three different types of radio link protocols (RLPs) are illustrated in FIG. 2, which are a signaling RLP 14, 24, a voice RLP 15, 25 and a packet data RLP 16, 26; thus Signaling RLP 14, 24 is designed to efficiently handle high-priority, packet-based signaling traffic between the RAN and the MS, Voice RLP 15, 25 is designed to efficiently transport voice traffic between the RAN and the MS and Packet data RLP 16, 26 is designed to efficiently transport packet data traffic between the RAN 101 and the MS 102 on a "best effort" basis, enabling a seamless and reliable communication.

Seo, Harris and Gage do not explicitly teach RLP in MAC sub-layer.

Wei in the same field of endeavor teaches the MAC sublayer comprises a Radio Link Protocol (RLP) 232 (Figure 2 and section 0036).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sage's system/method by incorporating the steps of RLP being in MAC sub-layer as suggested by Wei. The motivation is that, (as suggested by Wei, section 0036) the structure of the MAC sublayer and the entities that comprise the MAC sublayer are described in detail in document TIA/EIA/IS-2000.3-C, entitled "Medium Access Control (MAC) Standard for cdma2000 Spread Spectrum Systems," Release C; thus it is advantageous to adapt to known standards for implementation of MAC/RLP based communication for following reason: Companies actively involved in adhering to standards more frequently reap short- and long-term cost-savings and competitive benefits than those that do not. Standardization can lead to lower transaction costs in the economy as a whole, as well as to savings for individual

businesses. Standards have a positive effect on the buying power of companies. Standards can help businesses avoid dependence on a single supplier because the availability of standards opens up the market. The result is a broader choice for businesses and increased competition among suppliers. Companies also have increased confidence in the quality and reliability of suppliers who use standards. In addition, standards are used by businesses to exert market pressure on companies further down the value chain, i.e., their clients. Thus, businesses can use standards to broaden their potential markets.

#### ***Allowable Subject Matter***

9. Claims 4-13 and 16-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

10. Applicant's arguments see pages 11-15 of the Remarks section, filed 10/2/2007, with respect to the rejections of the claims 1-31 have been fully considered and are persuasive. The rejections to claims 1-31 have been withdrawn.

However, in view of further review and search, a new ground of rejections has been presented in this office action. As such any further response to Applicant's argument is moot.

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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571) 272-8307. The examiner can normally be reached on 8:00 am - 4:30 pm.

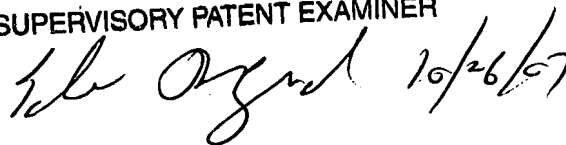
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Salman Ahmed  
Patent Examiner  
Art Unit 2619

SA  
10/16/2007

EDAN . . ORGAD  
SUPERVISORY PATENT EXAMINER

Handwritten signature of Edan Orgad, dated 10/26/07.